## WHAT IS CLAIMED IS:

1. A method of producing a denuded zone in a semiconductor wafer in a housing having a source of heat, a susceptor, a wafer support and a Bernoulli wand, said method including:

heating a semiconductor wafer with opposite major surfaces in a housing to an elevated temperature of at least about 1175°C with a heat source, said semiconductor being supported by a support in the housing during said heating;

ceasing said heating and moving said semiconductor out of conductive heat transfer relation with the support with the Bernoulli wand; and

cooling said heated wafer in the housing while holding said wafer out of conductive heat transfer relationship with the support at a rate of at least 10°C/sec until the wafer reaches a temperature of less than about 850°C thereby forming a denuded zone in the wafer.

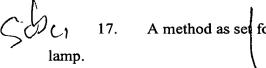
- 2. A method as set forth in claim 1 including placing the wafer in a chamber and applying an epitaxial coating to at least one said major surface thereof with said wafer being in immediate heat transfer relation with the support during at least a portion of the coating application;
- 3.A method as set forth in claim 3 wherein said wafer is heated to a temperature of at least about 1250°C after said coating is applied and the cooling rate of the wafer is at least about 20°C/sec.
- 4. A method as set forth in claim 2 wherein said wafer is cooled at a rate of at least about 15°C/sec.
- 5. A method as set forth in claim 2 wherein said wafer is cooled at a rate of at least about 20°C/sec.

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- A method as set forth in claim 2 wherein said wafer is cooled at a rate of at 6. least about 50°C/sec.
- 7.A method as set forth in claim 4 wherein said cooling rate is at least about 15°C/sec until the temperature of the wafer is reduced at least about 325°C.
- A method as set forth in claim 5 wherein said cooling rate is at least about 20°C/sec until the temperature of the wafer is reduced at least about 325°C.
- A method as set forth in claim 6 wherein said cooling rate is at least about 50°C/sec until the temperature of the wafer is reduced at least about 325°C.
- A method as set forth in claim 4 wherein said cooling rate is at least about 15°C/sec until the temperature of the wafer is reduced at least about 400°C.
- A method as set forth in claim 5 wherein said cooling rate is at least about 20°C/sec until the temperature of the wafer is reduced at least about 400°C.
- A method as set forth in claim 6 wherein said cooling rate is at least about 50°C/sec until the temperature of the wafer is reduced at least about 400°C.
- A method as set forth in claim 4 wherein said cooling rate is at least about 15°C/sec until the temperature of the wafer is reduced at least about 450°C.
- A method as set forth in claim 5 wherein said cooling rate is at least about 20°C/sec until the temperature of the wafer is reduced at least about 450°C.
- A method as set forth in claim 6 wherein said cooling rate is at least about 50°C/sec until the temperature of the wafer is reduced at least about 450°C.
  - A method as set forth in claim 1 wherein said heat source is light. 16.

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- 17. A method as set forth in claim 16 wherein said heat source is a halogen
- 18. An apparatus for processing semiconductor wafers to form a denuded zone in the wafer, said apparatus comprising:

a housing defining a chamber and having a door selectively movable between an open position and a closed position;

a heat source operably associated with the chamber;

a support in the chamber for selectively supporting a wafer in the chamber; inlet means communicating with the chamber for selectively permitting introduction of a fluid into the chamber;

a Bernoulli wand mechanism with a wand head movably mounted in the chamber and operable for moving the wafer to a position out of conductive heat transfer relationship with the support during cooling of the wafer to form a denuded zone; and

control means operably connected to the Bernoulli wand mechanism for controlling movement of the wand head between a wafer pick up position and wafer cooling position and being operable to maintain said wafer at the cooling position for a predetermined cooling period.

- 19. An apparatus as set forth in claim 18 wherein the door is operable for selectively sealing said chamber interior from an exterior of the chamber to maintain a pressure differential between the exterior and the chamber interior.
- 20. An apparatus as set forth in claim 19 wherein the support includes a susceptor positioned to be in immediate heat transfer relation with a wafer during heating of a wafer.